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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/541,145

01/03/2006

Tobias Schmidt

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EXAMINER

SASAKI, SHOGO

ART UNIT

PAPER NUMBER

1797

NOTIFICATION DATE

DELIVERY MODE

06/18/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

euspto@slspatents.com

Office Action Summary	Application No. 10/541,145	Applicant(s) SCHMIDT ET AL.	
	Examiner Shogo Sasaki	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/4/2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-13,18,19,21-23,27 and 28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-13,18,19,21-23,27 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Amendments to claims 4 and 21 are acknowledged.

Continued Examination Under 37 CFR 1.114

2. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 18, 19 and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Jones (US 3916465: Fig. 1-3; and US 3800602).

Regarding claims 18, 19 and 21-23, Jones (US 3916465) disclose a chromatogram (column 3, line 65–column 4, line 10) comprising a chromatographic column (16); a detector (17); and a sliding valve injector (Fig. 1) for chromatography having two sliding members with ports and apertures (18, 19) with a cover (20). The plate (19) includes Teflon clad on its surface (column 5, lines 21-24: Teflon is well known for its inertness and for very low friction coefficient.). Jones (US 3800602) also discloses a chromatogram with a similar valve injector with features of claim 18: two sliding members with ports and apertures (Fig. 1-7).

Claim 21 is a product-by-process claim. The patentability of said claim is based on the recited product and does not depend on its method of production.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 2, 4 and 6-13, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones (US 3916465: Fig. 1-3; or US 3800602) in view of Lehmann et al. (IDS: Sensor Proceedings II, 2001, 487-492).

Regarding claims 1, 2, 4, 6, 11 and 12, Jones (US 3916465; and US 3800602) discloses all of the limitations as set forth above.

Jones (US 3916465) further discloses a chromatogram (column 3, line 65—column 4, line 10) comprising a chromatographic column (16); a detector (17); and said sliding valve injector. Jones (US 3916465) also discloses that the detector may measure gas's thermal conductivity (column 5, lines 26-30: A gas flow sensor works by measuring thermal conductivity of a sample, or a change in thermal conductivity of a sample carrying conduit. Also thermal conductivity detector will have to be able to detect the presence of the gas indicating the flow.). Jones (US 3800602: Fig. 1-7) also further discloses a chromatogram (column 4, line 57—column 5, line 12) comprising a chromatographic column (16); a detector (17); and said similar valve injector with two sliding members with ports and apertures, and teach said detector (column 7, lines 35-39). In addition, Jones (US 3800602) shows multiple sliding valves injector used in series (Fig. 8). The sliding members of Jones (US 3916465; and US 3800602) also include multiple channels.

However, Jones does not teach that said chromatogram or the injector may be made miniaturized and provided on a circuit board.

Lehmann et al. disclose a micro-machined gas chromatography module including a column; a flow sensor; a ball valve type injector; and a thermal conductivity detector provided on a silicon chip (abstract; and Fig. 1, 2, 4, 5 and 7).

It would have been obvious to one having ordinary skill in the art at the time of the invention to provide the micro-sized invention of Jones to the device of Lehmann et

Art Unit: 1797

al., for the purpose of making the device portable, or reducing the sample size. A change in size is generally recognized as being within the level of ordinary skill in the art.

The claim would have been obvious because “a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.”

Claim 4 is a product-by-process claim. The patentability of said claim is based on the recited product and does not depend on its method of production.

Regarding claims 7-10, 13, 27 and 28, Jones discloses all of the limitations as set forth above.

Lehmann et al. further disclose:

- a control and evaluation unit provided on the circuit board (Fig. 3, 6 and 8: The controlling and the evaluation will have to be present on the device of Lehmann et al.);
- at least one heating element configured such that one or more of the injector, the separation column and/or the detector can be temperature-controlled (page 487, “1. Introduction,” lines 3-6; and page 489 “3. The micro machined TCD”);
- at least one heating element comprises ceramic plates with thick film heating elements (page 489 “3. The micro machined TCD”);
- a plurality of recesses provided in the circuit board such that the electronic control and evaluation unit is protected from the heat emitted by the heating elements (Fig. 4. The heater strips are placed near the trench in silicon chip.);
- a plurality of recesses provided in the circuit board into which a plurality of capillaries are countersunk for the gas flow (page 488, “2. The separation column,” lines 16-36).

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jones (US 3916465: Fig. 1-3; or US 3800602) in view of Lehmann et al. (IDS: Sensor Proceedings II, 2001, 487-492), and further in view of Lehmann et al. (IDS: Micro Total Analysis System, 2000, 167-170).

Regarding claim 5, modified Jones discloses all of the limitations as set forth above. However modified Jones does not explicitly teach that the valve injector is made of silicon.

Lehmann et al. disclose a micro-machined gas chromatography module including a column; a ball valve type injector; and a thermal conductivity detector provided on a silicon chip (abstract). The injector of Lehmann et al. includes a micro-grooved sheet made of silicon (Fig. 3).

It would have been obvious to one having ordinary skill in the art at the time of the invention to choose silicon as a material for the injector as taught by Lehmann et al., for the purpose of providing a material suited for micro-etching the channels and holes. It was within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use.

Response to Arguments

10. Applicant's arguments and affidavits filed 5/4/2010 have been fully considered.

11. The 112 rejections of claims 4 and 21 are withdrawn.

12. The "Declaration of Lehmann and Birken" have been fully considered. The 102(a) and 102(b) rejections of claims 1, 2, 4-10, 12, 18, 19, 21, 22 and 27 over Lehmann et al. (IDS: Sensor 2003 Proceedings, 157-161) are withdrawn.

13. Applicant's arguments with respect to the prior art rejection (pages 7-10 of the remarks; and paragraphs 4-6 of the "Declaration of Lehmann") have been fully considered but they are not persuasive.

In response to the remarks against the Jones reference, it is noted that currently presented claims 1, 18 and 27 do not structurally limit the claimed apparatus to a particular dimension/size. Claims do not structurally require that the device to be limited to a device smaller than 1cm³. Jones' injector or chromatogram may dimensionally differ

from what is disclosed in instant application. However, the structure of the injector and the general configuration/arrangement of the chromatogram as claimed are disclosed by the Jones references. A skilled artisan, who may be interested in making a small chromatogram and contemplating to utilize a known injector with a larger dimension, would be motivated to alter the dimension of the known injector to accommodate the injector in his/her invention.

In response to paragraph 1 of page 8, the examiner respectfully asserts that a skilled artisan would be motivated to look for another method of manufacturing the injector, which is structurally the same but smaller in size, using other available production technique. Claims do not structurally require that the claimed device would have to be made with a specific production technique. In addition, the manner in which a claimed apparatus is made do not distinguish the claimed apparatus from the prior art.

Furthermore, Jones teaches covering the injector surface with a Teflon coat (Applicant's polymerized layer includes Teflon.). Jones does not limit said Teflon coat/clad on the surface of his injector to a particular thickness.

As noted in the last office action, how the material for the coat/layer is made or applied (plasma polymerized = method of manufacture), does not impart structural limitations to the apparatus claimed. The recitation "plasma polymerized," which is directed to the manner in which a claimed apparatus is made does not distinguish the claimed apparatus from the prior art.

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1797

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shogo Sasaki whose telephone number is (571)270-7071. The examiner can normally be reached on Mon-Thur, 10:00am-6:30pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SS

6/11/10

/Brian R Gordon/

Primary Examiner, Art Unit 1797